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# SERVICE QUALITY IMPROVEMENTS AT COMMUNITY AERODROME RADIO STATIONS IN THE NORTHWEST TERRITORIES

## ABSTRACT

The Community Aerodrome Radio Station (CARS) program provides aviation weather and flight information services at small airports throughout northern Canada. In the Northwest Territories, the Arctic Airports Division of the NWT Department of Transportation delivers these services on behalf of NAV CANADA. The CARS Program includes all facets of the recruitment and training of CARS Observer/Communicators, including initial training at Aurora College in Fort Smith, on-the-job training and certification on station, and continuing management of service quality.

This paper describes the current training program, and management approaches. It discusses the Quality and Reliability Improvement Program, which improved system reliability markedly, and concludes that clear communication and on-going education through the use of a newsletter as a teaching tool were key success factors in improving customer service and the morale of Observer/Communicators.

## INTRODUCTION

The Community Aerodrome Radio Station (CARS) Program exists to provide aviation weather and basic flight information services to aircraft serving small communities in northern Canada. Its largely native workforce is recruited in individual communities, trained at Aurora College in Fort Smith, and returned to home stations for a period of on-the-job training prior to certification.

This paper provides an overview of the CARS program, including its history and social significance, and its role in the air navigation system. In particular, it discusses the Quality and Reliability Improvement Program instituted to improve customer service. (1)

## COMMUNITY AERODROME RADIO STATIONS

### History of the Program

The CARS Program began in the late 1970's as a cost-effective means of providing the basic information required for flight planning and to conduct instrument approaches into remote northern communities. It was associated with the "Arctic B & C" airport construction program, which provided

airstrips to communities with a stable population of over 100 and scheduled air service. Prior to this, air carriers had operated on a variety of unprepared strips (such as sandbars), ice strips and water aerodromes.

For many years, the practice had been to serve remote communities with Flight Service Stations, but this approach was expensive. Flight Service Specialists (FSS) were recruited in the south, trained for nine months in the Transport Canada Training Institute (since renamed the NAV CANADA Training Institute) in Cornwall, Ontario, and then deployed to stations across the country.

The duties of the FSS, and their training level evolved significantly from an origin in the technical branch of Transport Canada. Originally, they had been trained primarily on the operation of HF and VHF radio, teletype operation, weather observations and flight planning. By the 1980s, however, the requirements had expanded to include aerodrome traffic advisories, vehicle control, VHF-DF services and advanced weather briefing duties. The cost of training rose, as did the cost of equipping the stations with the required technologies to support these services.

At the same time, there was an increasing desire on the part of the territorial governments to provide meaningful wage jobs for residents of the small communities. The work opportunities in the north were (and remain) extremely limited, and community leaders pushed for the chance to train local people for work in their communities.

A pilot program began in 1978, and the CARS program has expanded significantly since then to become the most prevalent form of air navigation service in the north. The Government of the NWT (before the creation of the new Nunavut territory) operated thirty-three CARS, whereas only one control tower and eight FSS remain in the region, four of which are scheduled for conversion to CARS in the next eighteen months.

The duties of Observer/Communicators (O/Cs) are much more limited than those of FSS. The CARS O/C is trained to conduct and record weather observations, provide limited airport advisories of known traffic, and perform other related duties such as acceptance of flight plans for transmission to FSS and the dissemination of Notices to Airmen (NOTAMs) and Runway Surface condition reports.

The FSS continue to provide flight planning and flight following services for the region, and provide extensive briefing services by telephone or by radio.

Evolution in CARS Technology and Training

In the initial deployment of CARS, the O/Cs transmitted their weather and other information to “hub” Flight Service Stations via HF radio or telephone. In the early 1990s, this system was greatly improved by the deployment of personal computers that allowed direct input of weather via dial-up modems using toll-free lines. This reduced delivery cost and eased workload for the hub FSS, but it required the O/Cs to learn the use of a personal computer. For many trainees,

this was their first exposure to the PC environment.

A second initiative involved the use of flight data strips for recording of information. Initially, CARS O/Cs had recorded conversations in a hand-written log. As CARS were deployed at busier stations with more complex operating environments, it became increasingly clear that this was inefficient. By 1998, GNWT had trained all CARS

Observer/Communicators in the use of data strips. CARS strips are similar to those used by Flight Service Specialists, but are laid out to facilitate the recording of the specific advisory elements, such as altimeter setting.

## COMMERCIALIZATION OF THE ANS – NAV CANADA

Another significant milestone for the CARS system was the commercialization of the air navigation system (ANS) in 1996. Previously, the ANS had been owned and operated by Transport Canada (the federal Department of Transport), but a variety of factors led the government to divest itself of the ANS to a commercial entity. (2) NAV CANADA is a non-share capital corporation reporting to a stakeholder board of directors. This not-for-profit corporation is not government owned. Transport Canada maintains its regulatory role, but may intervene in the operation of the ANS only on the grounds of public safety.

When Transport Canada operated the ANS, it had entered into Memoranda of Understanding with the territorial governments to operate CARS on its behalf. When NAV CANADA assumed responsibility, it entered into negotiations with these governments to continue this arrangement by way of commercial contract. These agreements contain performance clauses that reflect NAV CANADA's customer-service orientation.

In these negotiations, responsibility for certification and recurrent training and testing (previously the duty of the hub FSS) was transferred to the territorial governments. Staffing an additional Aviation Programs Officer compensated for the increased workload. The second position would become the nucleus for the Nunavut organization after the division of the territory. These changes set the stage for a greater emphasis on training and customer service.

## SERVICE RELIABILITY

The services provided by CARS O/Cs are monitored at up to three levels. The hub FSS provides some quality assurance, particularly in the formatting of NOTAM. Arctic Airports, the operating division of the NWT Department of Transportation operates the CARS program for NAV CANADA. The weather observing program is also monitored by Environment Canada, the federal department responsible for weather collection and forecasting. For this reason, the quality of CARS services was generally considered good. There was little customer dissatisfaction with the quality of the information provided by CARS.

One service dimension on which there was dissatisfaction was the reliability of weather reporting. Missing or delayed weather observations present a

considerable problem for flight planning. At the time of the NAV CANADA negotiations, system reliability stood at 96 percent. Arctic Airports and NAV CANADA shared a concern about this statistic, and the contract, signed in late 1997, required that Arctic Airports raise this level to not less than 98 percent over five years.

Using Information Systems Effectively

Reliability was clearly the most significant user concern, and Arctic Airports determined to make improvements in this area a priority. A database had been set up earlier to provide head office managers with snapshots of how stations were performing. The first initiative in the "Quality and Reliability Improvement Program" (QRIP) was to provide this information to units in the field. Regional Managers were provided with monthly reports of the units in their areas.

As a further step, stations were provided with monthly graphs of their last twelve months reliability, and the system average, so they could monitor their own performance. The use of bar graph and line graphs made interpretation simple.

Recognizing Effort

The second step of the program was to highlight the importance of reliability to the organization. The "One Hundred Percent Club" was printed in *The CARS Journal* (newsletter) listing all stations that maintained 100 percent reliability for each month. The higher performing stations took immense pride in having their performance recognized.

At the same time, adherence to standards was increasingly strictly enforced. In most cases, this ended with counseling of O/Cs with poor performance records. In several cases, however, the individuals showed no interest in improving, and were de-certified. Rather than provoking discontent in the field, this generally reinforced the view that O/C's jobs were important, and should be approached professionally.

Building the Customer Service Orientation

Customers were strongly encouraged to direct complaints to senior management promptly, and to expect immediate resolution in most cases. As this understanding took hold, not only did deficiencies decrease, but customer approval increased considerably. Much of the negative perception that existed among some carriers arose from the view that customer complaints would not be investigated, and that there was no management commitment to improve service.

At the same time, management took every opportunity to encourage customers to use a postage-paid comment form to report both deficiencies in service and particularly good service. The positive feedback was viewed as at least equally important to the improvement of quality.

Teaching "The Big Picture"

A key aspect of the QRIP was making the statistics relevant to the O/Cs. *The CARS Journal* became an important teaching tool. Because their jobs concern the provision of services to aircraft in the immediate vicinity of their

aerodrome, many CARS O/Cs did not recognize the importance of their work to the system as a whole.
The nine-week training course is a very efficient method of teaching skills but, given the enormous amount of technical detail that students must absorb in that period, it is unrealistic to assume that they will fully understand the part they play within the ANS.

*The CARS Journal* began to feature articles that related the work of O/Cs to customer needs. An article by a NAV CANADA pilot showed how pilots use weather observations in flight planning and related the availability of accurate and timely observations to safety, efficiency (fuel uplift) and consumer costs. The description of a MEDEVAC flight within the NWT made the example very concrete.

Environment Canada weather forecasters wrote a series of articles on how forecasters use the "actual" weather data from CARS to support forecasting efforts. These included topics of interest to O/Cs, such as how blizzards are predicted, and how information from satellite images is meshed with hourly observations.

The articles from NAV CANADA and Environment Canada also served to improve the understanding of O/Cs about their role in a much larger system by personalizing the relationship. The articles contained photographs of the authors with short descriptions of their experiences and training.

Fostering Team Spirit

One feature of every issue was a letter from the Manager, Aviation Programs that talked about issues important to O/Cs. These ranged from the strategic system study being conducted by NAV CANADA to the importance of O/C observations in the study of climate change. It also provided an opportunity to pass on positive customer feedback, providing recognition to the O/Cs involved and reinforcing valued behaviours.

Upcoming changes in the system, such as the institution of biannual refresher training for O/Cs and the transition to Nunavut, were announced in the letter. The purpose was to let O/Cs know that they would be informed of changes in advance, and that their suggestions would be taken into consideration in the management of change.

98 in '98

By late 1997, six months into the program, reliability had improved considerably, averaging above 97.5% (depending on the period chosen). This encouraged management to challenge O/Cs to achieve 98 percent system reliability in 1998. Although O/Cs did not know it at the time, this represented the achievement, in a single year, of the five year improvement target negotiated with NAV CANADA. Management concluded that the target should be achievable, but not easy, if it was to be significant to employees and stakeholders.

To reinforce the value that Arctic Airports places on high quality and reliability, QRIP Excellence Awards were instituted. The first *Station of the Year* Award went to one of the two stations that achieved 100 percent reliability in 1997. *Individual*

*Excellence* Awards also recognized top performers in customer service and reliability. The selection was based on reliability reports, Environment Canada and NAV CANADA inspection reports, Regional Manager suggestions, and customer feedback from airline dispatchers and pilots.

The winners received Quality Leader shirts and letters from the Deputy Minister of Transportation and NAV CANADA's Vice-President, Operations. Their names were published in *The CARS Journal*, with a description of the factors that had made them stand out in the selection process. This reinforced the values of the organization.

Meeting the Challenge

Throughout 1998, system reliability rose steadily. In the last three months, it stood at 99 percent or higher, and system reliability for the year as a whole reached 98.5 percent. In most months, more than half of the stations reported 100 percent reliability, and most were above 99 percent.

This achievement was applauded by NAV CANADA and welcomed by the Northern Air Transport Association (NATA). In recognition of the achievement, several NATA members provided prizes for the 1998 *Excellence Award* winners. First Air provided free return air transportation to Ottawa for the winners, who will visit their flight dispatch operation in Ottawa. Canadian North provided system passes for the *Station of the Year* winners.

## OBSERVATIONS AND CONCLUSIONS

The achievement of excellent results is unambiguous, but the importance of factors is difficult to prove. This change took place in the context of significant change at the strategic level of the organization.

The negotiation of a commercial contract with NAV CANADA, allowed the program to be reappraised and recognized as an important dimension of the air navigation system in the north. The performance-based contract clarified the duty to improve service, and concentrated responsibility for this in the hands of Arctic Airports. Previously, this responsibility had been diffused among several players. Management resources were also increased in the period.

Senior management support for QRIP, from NAV CANADA, Arctic Airports Division, and the Department of Transportation, was always clear. Support from other organizations including Environment Canada and customers, played a significant role.

On the tactical (management) level, the key success factors are difficult to gauge, but several observations follow:

- Communication is critical
  The most important common theme is that unless management communicates its intentions, goals and values clearly and systematically, positive change is unlikely to occur.
- Training is an on-going process
  Quality improvements are facilitated by on-going education that provides a rationale and a context for change.

- Recognition is important
  By recognizing individuals and teams, the organization reinforces desired behaviours but, more importantly, it makes its values clear.
- People hold the power to change
  The ability to improve performance is not in the hands of management. Management's task is to identify areas requiring improvement and facilitate change by providing a rationale and feedback. The improvement, and whatever respect this gains, is earned by people in the field in their daily work.

## REFERENCES


1. The author was Assistant Director, Aviation Programs for the Government of the Northwest Territories until returning to the private sector in May 1999. Views expressed in this paper are his own and do not necessarily reflect the views of NAV CANADA or the GNWT Department of Transportation.

2. For more detail see Raymon J. Kaduck. 1998. **NAV CANADA's Provision of Service in Northern and Remote Areas**. Proceedings of the 8th World Conference on Transport Research, Antwerp 1998.